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AMENDMENT UNDER 37 C.F.R. §

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Serial Number: 09/868,408

Filing Date: September 25, 2001

Dkt: 30394-1049

Title: METHOD OF A DOSED APPLICATION OF A LIQUID ONTO A SURFACE

IN THE CLAIMS:

This following listing of claims replaces all previous claims listings.

Listing of Claims

1. (currently amended): A method of ~~of the~~ electrospray deposition for the dosed application of a liquid onto a ~~selected portion of the~~ surface of a target substrate (for analysis) comprising: ~~[[,]]~~ wherein

feeding the liquid is fed to the distal tip of a capillary at a flow rate between 0.01 pl/s to ~~1 ml/s~~ 10nl/s

wherein the distal tip comprises an orifice directed toward a the surface of the target substrate, and wherein the inside diameter of the distal tip of the capillary is less than 150 μm ; and

applying and a voltage difference is applied between the orifice or the liquid and a counter electrode or the target substrate until the desired amount of liquid has been applied to a ~~the selected portion of the~~ surface, wherein the distance between the orifice and the surface of the target substrate is less than 2 mm between .25 and .5 mm.

2. (previously presented): A method according to claim 1, wherein as substrate an object for performing an assay is used.

3. (previously presented): A method according to claim 1, wherein the liquid comprises a biological particle selected from the group consisting of a single-cell organism, an enzyme, a probe for the detection of nucleic acid sequence, an enzyme, a receptor and a ligand.

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4. (previously presented): A method according to claim 3, wherein as the receptor an antibody is used.

5. (previously presented): A method according to claim 1, wherein the flow rate varies between 1 pl/s and 1 nl/s.

6. (currently amended): A method according to claim 1, wherein the distance between the orifice and the surface of the target substrate is 200 300 to 1000 450 μm .

7. (currently amended): A method according to claim 1, wherein ~~the selected portion of the surface~~ the surface of a target substrate is bounded by means for limiting [the] spreading of the liquid over the surface.

8. (currently amended): A method according to claim 7, wherein ~~a substrate the surface of a target substrate further comprises is used whose surface comprises~~ a well with the selected portion being comprised of the bottom of the well, wherein a wall of the well contains spreading of the liquid over the surface.

9. (currently amended): A method according to claim 7, wherein the means for limiting ~~is a~~ further comprises a barrier selected from the group consisting of a hydrophilic barrier and a hydrophobic barrier.

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10. (currently amended): A method according to claim 7, wherein a means for limiting a charged barrier is used having a charge whose sign is the same as that of the liquid applied to the surface.

11. (previously presented): A method according to claim 1, wherein the application is performed in an atmosphere substantially saturated with vapor from the liquid.

12. (previously presented): A method according to claim 1, wherein the application is performed in an atmosphere, which, in comparison with atmospheric air, reduces chance of discharge.

13. (currently amended): A method according to claim 1, wherein after the application of the liquid onto a surface of a first target on the substrate ~~the selected portion of the surface~~, the ~~target~~ substrate and the orifice are moved in relation to each other in a plane extending substantially perpendicular to the axis of the capillary, and ~~in that a second target on the substrate~~ selected portion of the surface is provided with liquid, wherein which the second target ~~selected portion~~ does not overlap with the ~~selected portion~~ first target provided with liquid.

14. (previously presented): A method according to claim 1, wherein an array of capillaries is used with the capillaries spaced from each other such that the selected surfaces onto which liquid is to be applied by two adjacent capillaries, do not overlap.

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15. (previously presented): A method according to claim 1, wherein the counter electrode is formed by the substrate.

16. (previously presented): A method according to claim 1, wherein an electrode is used as counter electrode, which electrode substantially surrounds the selected portion of the surface and which is retained in vicinity to the surface.

17. (previously presented): A method according to claim 1, wherein the amount of applied liquid is measured by means of one or more characteristics from the group consisting of current and voltage characteristics.

18. (previously presented): A method according to claim 1, wherein a gelling liquid is applied to the selected portion of the surface.

19. (currently amended): A method according to claim 1, wherein the counter electrode is applied underneath the ~~selected surface~~ of the target substrate and is covered with a substantially insulating thin film.

20. (previously presented): A method according to claim 5 wherein the flow rate varies between 10 and 100 pl/s.

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21. (new) A method of electrospray deposition for the dosed application of a liquid onto a surface of a target substrate comprising:

feeding the liquid to the distal tip of a capillary at a flow rate between 0.01 pl/s to 100 pl/s wherein the distal tip comprises an orifice directed toward the surface of the target substrate, and wherein the inside diameter of the distal tip of the capillary is 60 μ m or less; and

applying a voltage difference between the orifice or the liquid and a counter electrode or the target substrate until the desired amount of liquid has been applied to the surface, wherein the distance between the orifice and the surface of the target substrate is between .25 and .5 mm.

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